

The Impact of Catastrophes on Property Insurance

An Honors Thesis (HONRS 499)

by

Cheryl K. Hunter

Thesis Advisor

Dr. Stephen Avila

Dr. Stephen Avila

Ball State University

Muncie, Indiana

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This discussion of catastrophes is designed to provide a better understanding of their impact on the property insurance mechanism. The discussion includes an overview of recent major catastrophes which have struck the United States. Along with a discussion of the devastating losses sustained by insurers, the various ways in which the industry has responded are explored. Finally, suggestions on how insurers may cope with catastrophes in the future are given.

In the United States, four of the five most severe individual catastrophes from 1950 to 1992 occurred in 1989 or later. These four events include Hurricane Hugo (1989), the Oakland Fire (1991), Hurricane Andrew (1992), and Hurricane Iniki (1992) ("Impact" 5). The severity of the California earthquake in January 1994 is mounting as losses are being reestimated from earlier predictions. Prior to 1994, hurricanes had the greatest impact on homeowners insurance ("Impact" 10). Earthquakes, as seen by the California earthquake just a few months ago, are few in number but devastating in terms of losses.

In 1992 Hurricane Andrew accounted for the bulk of all losses, totaling \$16 billion (Ferraiolo 11). Within three hours after the storm hit, preliminary data estimated losses to be \$10.7 billion with \$15.6 billion being the worst-case scenario. Other estimates given were off-the-mark. One initial estimate was \$7.8 billion. Prudential Property and Casualty Insurance Company originally estimated losses at \$136 million, but incurred \$1.1 billion in pretax losses after reinsurance. Other companies saw final losses five times their initial estimates (Noonan 41). The reasons for under-estimating Hurricane Andrew's losses vary. Building costs in south Florida rose tremendously and builders drove prices up as much as 50 percent (Noonan 42). Knowing how many claims to expect was not the problem. Knowing how much the amount of each claim was going to rise became the question.

The sudden demand for building materials after Hurricane Andrew caught suppliers off-guard. Roofing shingles were imported to Florida from as far away as west of the Mississippi River. Shortages also meant long waits for repairs. Six months after the hurricane struck, about three-quarters of severely damaged homes had yet to be repaired. Immediately

after the storm, the materials used to temporarily protect those homes were scarce. The continued rains soaked the area. Those exposed homes went unprotected, and the losses went from partial to sometimes total (Noonan 42).

Compliance with building codes also became a factor in figuring insurers' losses. After Hurricane Andrew hit, lawsuits and allegations came accusing contractors of skimping on materials and violating Florida building codes. The structures were said to be unsuitable for withstanding such a hurricane. Dean Flesner, a vice president of State Farm Fire and Casualty Company, estimates that 25 percent of the losses from Hurricane Andrew can be blamed on poor compliance with building codes, though he stresses that any figure is only guesswork. Other experts have speculated that the poor building codes can be blamed for 20 to 40 percent of the losses (Noonan 42).

One feature that appeared to distinguish partial from total losses was the presence of "hurricane straps" that hold the roofs of houses in place. According to Len Guarini, vice president of the actuarial department at PRUPAC, a house's roof is its most critical "seal" against wind and rain. In one development, model homes with hurricane straps withstood the hurricane well, while those without straps were destroyed. "Tens of thousands" of houses would have generated claims of only \$25,000 to \$50,000 had their roofs remained intact, says Mr. Flesner. Instead, the roofs blew away, causing total losses and payouts of \$150,000 or more. He points to one study conducted for State Farm by an engineering firm on homes at the fringes of Hurricane Andrew, where winds are thought to have peaked at 120 mph. Roofing failures due to code violations were found in more than half of the homes studied (Noonan 42).

Wind damage turned out to be far greater in Hurricane Andrew than many experts had anticipated, according to Jack Weber, executive director of the Natural Disaster Coalition (formerly the Earthquake Project). Flooding is usually regarded as the worst threat. But Hurricane Andrew contained winds of unexpected speed. Wind, at sufficiently high velocities, tears down structures regardless of location and leaves total losses. Flooding, while still capable of catastrophic damage, is confined to low-lying areas. When the waters recede, there may be salvageable structures still standing (Noonan 44).

Whether a house was destroyed by Hurricane Andrew's ravishing winds or soaked by weeks of rain, many homes that lacked full-replacement policies ultimately were treated as if they had this coverage, all in the name of politics and public relations, according to Karen Clark, president of Applied Insurance Research. For many months, companies continued to reopen files as losses worsened and costs escalated. Other factors that emerged as a result of Hurricane Andrew's devastation include fraudulent and inflated claims. These claims either got past overworked adjusters or were overlooked in an attempt at generosity. Public adjusters invaded Florida, whose profits depend on the size of the checks they write. Florida Insurance Commissioner Tom Gallagher eventually cracked down on those adjusters, some of whom were collecting commissions of 30 percent on each settlement (Noonan 93).

1992 saw \$22 billion worth of catastrophes, according to N. David Thompson, president and chief executive officer of North American Reinsurance Corporation. Mr. Thompson claims that Hurricane Andrew was the single worst catastrophic loss in the property/casualty industry. Although the high estimate of losses due to Hurricane Andrew is at \$16

billion, had the storm struck 20 or 30 miles farther north, damages could have reached \$45 billion (Christine 60).

Catastrophe losses in 1992 equaled those incurred from 1981 to 1990. During that time, losses caused by catastrophes totaled \$22.5 billion. In 1992 Hurricane Andrew losses were the greatest, but Hurricane Iniki, the Los Angeles riots, the Chicago flood, windstorms, hail, snow and tornadoes added another \$6 billion. Even without the hurricane losses, 1992 would have been the second most costly year on record (Ferraiolo 11).

Before Hurricane Andrew devastated southern Florida, Hurricane Hugo had its way with South Carolina in 1989. Gross losses for Hurricane Hugo were \$4.2 billion, more than ten times the premiums written for homeowners and commercial multiple peril insurance in South Carolina (Ferraiolo 11). Although the insured losses from Hurricane Andrew were more than three times as great as those from Hurricane Hugo, Hugo is the next most severe catastrophe. Hurricane Hugo caused more than twice the insured losses of the severest catastrophe before 1989 - Hurricane Betsy in 1965 ("Impact" 6).

1993 proved to be a year of dramatic financial recovery for the property/casualty insurance industry. Yet, industry analysts warn that the recovery may be short-lived. 1994 is already showing signs of becoming one of the worst on record for catastrophes, possibly second only to 1992. According to Sean Mooney, senior vice president and economist for the New York-based Insurance Information Institute, claims from the January earthquake in Los Angeles are now expected to top \$4 billion. Also, he noted that winter storm claims have already passed \$1 billion and some analysts are estimating they will total \$3 billion. Mr. Mooney states that

these early natural disasters could make 1994 the second or third worst year on record for catastrophes, and this is before the hail, tornado, and hurricane seasons (Jones 21).

The big financial improvements posted by the property/casualty insurance business last year "must be kept in perspective," according to Peter Wade, an analyst with New York-based Standard and Poor's. The industry rebounded expectedly with a 628 percent growth in operating income to \$13.2 billion (compared to a \$2.5 billion loss in 1992), as well as a nearly 50 percent decline in underwriting losses to \$18.7 billion (from \$36 billion in 1992). Net income after taxes for the property/casualty business totaled \$18.5 billion last year, up 219 percent from the \$5.8 billion figure for 1992. Wade added that this major improvement over the worst year in its history doesn't mean that the business is doing well (Jones 21).

California has been hit with no fewer than four catastrophes in less than five years. The disaster toll includes the 1989 Loma Prieta earthquake, the costliest earthquake in United States history, which caused \$7 billion in damage in the San Francisco area, of which only \$1 billion was insured. In 1991, insured losses from fires in Oakland totaled \$1.7 billion. The 1992 riots in Los Angeles caused \$775 million in insured losses, while the brush fires of Southern California in the fall of 1993 caused nearly \$1 billion in insured losses ("Preparing" 8).

The earthquake that tore through the Los Angeles area on Monday, January 17, 1994, measured 6.6 on the Richter scale. The earthquake was followed by numerous aftershocks, several of which were greater than 5.0 on the Richter scale. The earthquake, which had its epicenter in the San Fernando Valley town of Northridge, crumbled freeways, collapsed

many buildings, and left thousands of structures uninhabitable. The earthquake killed 55 and injured about 7,000 people (Kertesz 1).

Initial reports estimated insured losses from the California earthquake to be at least \$1.5 billion to \$2.5 billion (Kertesz 1). These figures would have made this earthquake the largest insured earthquake loss ever. With some insurers substantially increasing their estimates of losses in the Los Angeles earthquake, it now appears likely that the overall insured loss will top \$4 billion. The Property Claim Services Division of the American Insurance Services Group in Rahway, New Jersey, which originally estimated the insured loss at \$2.5 billion, is resurveying over 100 insurers and will soon revise its estimate to approximately \$4 billion. It became clear the the original industry loss estimate was too low when Allstate increased its loss estimate from the January 17 earthquake from \$350 million to \$650 million. 20th Century Insurance Company more than doubled its loss estimate from \$160 million to \$325 million (Haggerty 23).

The California earthquake insured losses might be thought of as taking a hard hit at property/casualty insurers. But experts tend to believe that the property/casualty market will survive this, just as it has survived the other catastrophes. Mooney says, "If Hurricane Andrew didn't do it, it's hardly likely that this would do it." "This industry has clearly shown that it can swallow this," said Alan Levin, senior vice president-insurance rating services of Standard and Poor's Corporation ("Record" 38).

The earthquake may have minimal effects in narrow markets such as California earthquake coverage. California's earthquake market is dominated by three companies - State Farm Group, Allstate Insurance Company, and Farmers Insurance Group - which together control almost half of the market. Other top earthquake insurers in California include -



Aetna (6.1%), USAA (4.5%), 20th Century (3.5%), SAFECO (3.3%), CSAA (3.0%), Planet (2.4%), and TIG (2.3%) ("Record" 38).

Many victims of the Southern California earthquake may face staggering repair bills because they lack insurance that will pay for their homes. Policyholders will be able to claim fire damage under standard homeowner policies. But many residents won't be covered if their homes collapsed or had other structural damage due to the earthquake. Even those who bought special earthquake insurance may face steep bills, because earthquake policies typically require customers to cover five percent to ten percent of the damage. "I think there's quite a number of people who don't have the coverage," said Rock Jenkins, a spokesman for State Farm Insurance. "It's an expense a lot of people don't want to pay for." ("Saving" 2). The National Association of Independent Insurers estimates that 25 percent of all California homeowners have earthquake insurance. In San Fernando Valley, where the earthquake was centered, approximately 40 percent of homeowners have earthquake coverage ("Record" 38). In California, earthquake coverage costs an average of \$150 to \$300 annually on top of average homeowners' insurance rates of \$500 to \$600, according to Jeanne Salvatore, a spokeswoman for the Insurance Information Institute. For earthquake-prone areas, it can cost more. Jenkins said that State Farm charged about \$409 for earthquake insurance with a five percent deductible for a \$300,000 home in the San Fernando Valley. The same policy, with a ten percent deductible, would cost \$327 ("Saving" 2). Californians are required by law to be offered earthquake insurance when they purchase or renew homeowners or renters insurance, but they are not required to purchase it ("Record" 38). Other than the substantial cost of buying earthquake coverage,

homeowners may not purchase it because they assumed the U.S. government would provide low-cost loans or grants after such a disaster ("Saving" 2).

Neither of the stricken area's two largest insurers - State Farm and Allstate - is reinsured for earthquake losses. State Farm had received 35,000 claims, primarily homeowners' claims, in just the first few days after the earthquake. After the San Francisco earthquake, State Farm received a total of just 31,000 claims. State Farm was planning to add 500 adjusters and 100 claims management professionals from across the country to the 100 adjusters already on-site. Allstate, which says earthquake reinsurance is too expensive to buy, had received 12,086 claims in just four days following the Los Angeles earthquake. Allstate had 300 adjusters on-site with additional retired adjusters on-call ("Record" 38).

Farmers Insurance Group received 14,000 loss reports by the fourth day following the earthquake. Of its 400,000 homeowners policies in the Los Angeles area, about one-third include earthquake coverage. Farmers does not buy catastrophe reinsurance, but does have a risk excess reinsurance program for high-valued buildings that covers \$28 million in excess of \$2 million. There is a \$56 million aggregate per occurrence on the risk excess policy ("Record" 38).

Reinsurance is an integral part of most insurance companies' catastrophe programs. Without protection from catastrophes, companies subject themselves to possible financial strain or insolvency. The reinsurance agreement may be on an excess of loss basis. With an excess of loss arrangement, the insurance company assumes a certain amount of loss as a retention. Losses above the retention are covered by the catastrophe treaty.

Some insurers depend solely on their reinsurance arrangements to protect them from catastrophic losses. While depending solely upon reinsurance agreements may relieve the insurer of some duties, there is always a danger that this protection will prove to be inadequate when the catastrophic event occurs. There is also the question of the financial ability of reinsurers to respond in the event of a massive catastrophe. There is also the question of availability and cost of future reinsurance should the reinsurer be responsible for an extremely large loss arising from a concentration of writings. Therefore, many companies choose to limit their concentrations of liability and total amount exposed to certain catastrophe perils. Most commonly such catastrophe control plans deal with exposure to hurricane and earthquake losses, although individual insurers may feel the need to devise other programs to meet their specific needs (Hollingsworth 125).

Catastrophe exposures vary widely from one geographic area to another. Hurricane losses are common along the Gulf Coast and the south Atlantic coast. Earthquake losses tend to be concentrated around certain geologic faults. When a primary insurer decides to have a catastrophe reinsurance program, the geographic distribution of its insured properties must be carefully analyzed. The analysis should consider the numbers of properties that could be damaged in a single occurrence and the maximum aggregate amount of damage from such an occurrence (Harrison 52).

Reinsurers have also been affected by the recent catastrophes. Following 1992's catastrophes, reinsurers experienced huge losses. As a result of these losses, reinsurers reduced their exposure in the overly concentrated catastrophe-prone areas. These areas are also where reinsurance is most in demand. Problems in obtaining catastrophe

reinsurance were a major factor in limiting new earthquake writings. Earthquake insurance capacity in California was down nearly 20 percent ("Impact" 16).

Following 1992's catastrophes, prices for reinsurance and retentions by primary insurers increased substantially. Rates for available catastrophe reinsurance rose between 20 and 250 percent, depending on the ceding insurer's exposures, loss history, and ceded coverage layers. In 1992, U.S. insurers provided approximately \$10 billion in catastrophe coverage. They bought a total of \$8 billion in catastrophe reinsurance coverage above the \$2 billion in coverage they retained. If U.S. insurers purchase catastrophe reinsurance coverage in amounts similar to 1992's, overall retentions could rise to \$4 billion ("Impact" 16).

Reinsurers have also imposed stricter policy terms. Some reinsurers have eliminated limits reinstatements for losses from a catastrophe extending over many days. Reinsurers may have added occurrence limits on certain property coverages, where none were previously imposed, to cap exposure to future catastrophes. Reinsurers have imposed stricter terms in an effort to recover from the catastrophes' drain on their surplus. Severe catastrophe losses can bring cash flow problems to some reinsurers, which might then delay or refuse payments to the ceding insurers ("Impact" 16).

Reinsurance is not limited to the United States. Lloyd's of London was formerly one of the largest reinsurers of American risks. The number of individual investors, or names, declined from 33,000 in 1989 to 19,000 in 1992. Lloyd's capacity fell more than 50 percent to \$11.8 billion. The London company market for catastrophe business, which numbered about 120 companies five years ago, is down to only 20 companies. In the

United States, the number of reinsurers has dropped over the last ten years from 129 to 54. Twenty of these reinsurers may be up for sale ("Impact" 17).

The capacity of the reinsurance market is small, compared to the potential loss from a \$50 billion catastrophe. The amount of reinsurance that may be available worldwide in the event of a major catastrophe in the U.S. is difficult to determine. In 1992, the total net premiums written in the U.S. reinsurance market were \$13.9 billion. Surplus amounted to \$16.4 billion. This is approximately the amount estimated for Hurricane Andrew's losses. The 1992 surplus-to-premium ratio was 1.18 for U.S. reinsurers ("Impact" 17).

In 1991, total reinsurance premium ceded to overseas reinsurers was approximately \$11.5 billion. Not all of the combined domestic and overseas reinsurance premiums cover catastrophic property risks. Only an estimated \$8 billion in catastrophe reinsurance was available in 1992. Given that reinsurers' corresponding surplus was double this amount (making the ratio of surplus to premium much higher than that for U.S. reinsurers alone - 1.18 in 1992), it would be far short of \$50 billion. \$50 billion is the possible size of insured losses from a major catastrophe ("Impact" 17).

At the end of 1992, A.M. Best estimated that amounts recoverable from all reinsurance represented slightly less than 45 percent of the estimated loss from Hurricane Andrew. A comparable percentage of a \$50 billion catastrophe would exceed the available reinsurance surplus. These figures indicate that the combined resources of domestic and overseas reinsurers would be far from sufficient to cover a \$50 billion catastrophe ("Impact" 17).

Reinsurers do agree that the Los Angeles earthquake will not develop into a major reinsurance loss. One reason is that estimates of insured losses are far less than those from Hurricane Andrew in 1992. Some Lloyd's of London catastrophe underwriters say that \$3.5 billion is the minimum loss that would trigger excess of loss reinsurance claims from major U.S. ceding companies into the London market. Another reason reinsurers expect only small losses is that catastrophe rates have been high in recent years, and those higher rates have prompted ceding companies to retain more losses. The earthquake may increase demand for catastrophe coverage from Bermuda, London, and United States reinsurance companies (Greenwald 38).

Reinsurance executives do not expect the earthquake to have a major impact on reinsurance or the overall insurance industry. Spokesmen for the world's two largest reinsurers - Munich Reinsurance Company and Swiss Reinsurance Company - said early indications were that the earthquake was comparable to the 1989 San Francisco Bay area earthquake that did nearly \$1 billion in insured damage. "The circumstances are very similar, the insurance density and other factors are the same," said a Munich Reinsurance spokesman (Greenwald 38).

Bill Munson, president of reinsurer Mercantile and General Insurance Company of America in Morristown, New Jersey says, "From our own perspective, our own assessment, it will be less than what we experienced from the San Francisco earthquake and, overall, it's not going to be a huge problem for the industry. My guess is it's more of a psychological blow than a financial blow." SCOR Reinsurance Company won't know its losses for some time, said Jerome Karter, president and CEO of the New York firm (Greenwald 38).

Many reinsurance executives offered few specifics, but said the earthquake would be a minor loss for them. Paul T. Hasse, CEO of Centre Cat Ltd. in Bermuda, said that it's not likely to be a major event for them. Other reinsurers did estimate their earthquake losses, which ranged from \$1 million to \$10 million. Global Capital Reinsurance Ltd. expects "no more than \$10 million, if that," said Larry Doyle, CEO of the Bermuda catastrophe facility. NAC Reinsurance Corporation of Greenwich, Connecticut, foresees only "a few million dollars" in losses, said Paul Malvasio, vice president and chief financial officer. Right now, NAC Reinsurance Corporation has retrocessional coverage for losses in excess of \$5 million, he said, so even if that estimate is wrong, "the most it should hit us is \$5 million." At Transamerica Reinsurance Company, the loss is likely to be about \$1 million, said Edwin M. Millette, president of the Stamford, Connecticut-based company. "It may in fact be less than that" (Greenwald 38).

Several factors are expected to hold down reinsurer losses. Excess per-risk or pro rata reinsurance "will pick up a fair amount of this loss, especially on the commercial side," with the remainder being subject to catastrophe covers, said Frank Wilkinson, executive vice president for reinsurance intermediary E.W. Blanch Company in Minneapolis. For most primary insurers, the loss will be less than their contractual retention under catastrophe coverages, so the insurers will have to absorb the losses on a net basis, said Mr. Wilkinson (Greenwald 38).

Higher primary retentions also will hold down reinsurer losses. "The impact to reinsurers will be negated by the higher retentions by the ceding companies, and the deductibles in California are quite substantial," said James Bryce, senior vice president of underwriting for International

Property Catastrophe Reinsurance Company Ltd. of Bermuda. "It's a small, small net loss" to the London market, predicted Michael Harris, underwriter for Lloyd's of London syndicate 952, which specializes in high-level catastrophe excess of loss reinsurance. He also said that much of the catastrophe reinsurance left the London market during January 1 renewals and is now placed in the Bermuda market (Greenwald 38).

Even though the earthquake was not expected to be a major insurance loss, it could increase demand for catastrophe coverage. "Psychologically, it's sort of going to make a number of us come to the conclusion that the frequency and severity of catastrophes seen in the last four to five years is probably more typical of what we're going to see in the future, as opposed to the frequency and severity of the last 15 years," said Ajit Jain, president of the reinsurance division of Berkshire Hathaway Incorporated in Stamford, Connecticut (Greenwald 38).

Primary insurers are looking for ways in which to deal with the recent string of catastrophes, especially the January earthquake. Four major carriers are asking for permission to raise their California homeowners' premiums between seven and 22 percent. The recent disasters, along with not having rate increases in several years, are the reasons for the request. The increases require the approval of Insurance Commissioner John Garamendi, who said the companies will have to prove the need for the higher premiums ("Four" 9).

The companies include California's largest property/casualty insurer, State Farm, which seeks an 8.3 percent hike. Also asking for increases are Century National, 7 percent; 20th Century Insurance, 21.8 percent; and Prudential, 9.9 percent. Allstate Insurance Company, which sought a 9.9



percent rate hike, already received permission to raise premiums by 6.8 percent ("Four" 9).

State Farm said the everyday cost of doing business and paying claims is as much to blame for the increase requests as the disasters that have plagued California in recent years. The company, which has more than one-fourth of the market with 1.43 million policies in 1993, anticipates a \$50 million annual loss by 1995 in homeowners' underwriting, according to Marcia Larson, a spokesperson for State Farm. State Farm has also informed its 2,100 California agents not to write new homeowners policies, unless they lose existing policyholders ("Four" 9).

The Woodland Hills, California-based 20th Century, said it sought a 21.8 percent hike because it has not had an increase in homeowners' premiums in 12 years, but has paid out sharply higher settlements. Ironically, Los Angeles, California-based Farmers Insurance Group received permission to lower homeowners' rates by about 2.5 percent ("Four" 9).

One consumer representative, Philip Roberto of the nonprofit organization Proposition 103 Enforcement Project, believes insurers are flooding the insurance department with premium-increase requests, hoping that some may slip through without full hearings. Under California law, the increases go into effect automatically unless they have hearings in six months. The department, however, said only four of the state's 30 largest carriers have sought hikes ("Four" 9).

Responding to the potential for a severe catastrophic event is something the property/casualty industry is trying to prepare for. Yet, according to H. Felix Kloman, vice president of Tellinghast, the industry is incapable of responding realistically to the forecasted economic effects of

catastrophes. He notes the industry has failed to use sophisticated risk assessment skills. Also, he argues that the industry is inadequately capitalized to meet the problem of the higher frequency and severity of catastrophes. "Two major events totaling \$50 billion to \$75 billion could effectively cripple the U.S. market, which accounts for 42 percent of world premiums," Kloman warned (Howard 37).

There are ways in which the property/casualty insurers are devising to soften the effects of catastrophes on the industry and policyholders. The industry is working with government, regulators, and the public to implement innovative approaches to reduce catastrophes' physical and financial damage. A study by the New York-based Insurance Services Office identifies several methods which have considerable potential for helping insurers better deal with catastrophes. The first method is utilizing effective building codes. These involve grading local governments according to their compliance and level of enforcement with building code standards. Homes built according to good building code standards suffer less damage in major storms, according to ISO ("Impact" 23).

Also, companies should look to geographic diversification. Applying new computer technology such as Geographic Information Systems could enable insurers to better monitor their geographic concentrations of business. Some insurers that were over concentrated in major storm-prone areas have become insolvent, ISO notes ("Impact" 23).

Improved ratemaking procedures is another method of coping with catastrophes. Using computer models that can link long-term natural disaster information with current demographic information to produce more accurate costs can contribute to better ratemaking. Current ratemaking procedures suffer from a lack of data on catastrophes - which are random

and relatively infrequent - and from the differences between current conditions and those conditions underlying the historical data ("Impact" 25).

Catastrophe futures and options may be one way of dealing with catastrophes. Expanding use of these recently developed publicly traded financial vehicles would spread some of the risk of catastrophes beyond insurers and reinsurers to the wider capital markets. Catastrophe futures are not widely used today because state regulators do not recognize them as a hedge, as opposed to an investment. As a hedge, futures can be used, like reinsurance, to offset unexpectedly large losses and improve the insurer's balance sheet ("Impact" 22).

Robert Mirabile, vice president of facultative reinsurance at New York-based North American Reinsurance Company, emphasizes the importance of knowing where these catastrophes are likely to occur and what the damage is likely to be. "It seems clear that estimates of storm loss potentials can no longer be based on ceded premiums by state, for example, because it is necessary to know where the risks are along paths of vulnerable exposure." Mirabile also states that while earthquake damages are hard to estimate, the industry has made a significant effort of planning for a major earthquake event. "What is needed are corrections to be made before the fact instead of in constrained circumstances," Mirabile suggested ("New" 25).

Richard Polun, manager of the New York branch for North American Reinsurance Company, emphasizes the need for firm underwriting in light of the increased exposure and insufficient reserve capacity for catastrophes. He said that the underwriting function "no longer has the luxury of being in a world by itself. While the impression may be that underwriters have no control over the business they conduct, it has to be

understood that it may be very difficult at times to remain clear-minded because the deregulating atmosphere of the past several years has produced a confusion about basics and an undue reliance upon the financial power of investment." Polun outlines several ways in which the underwriters are able to do their best under these circumstances. First, maintain submission standards and consistency in analyzing and rating risks. Second, know as best as one can the difference between a fair rate, a going rate, and a walk-away rate. Third, keep an ongoing sense of the quality of risks and the demands on rates made by individual producers, as well as the experience of the producers' accounts. Another factor underwriters must consider is deciding at what price a risk should be declined because the going rate is inadequate. Polun says that if volume goals are under pressure or that the combined loss ratio is not to be protected, it can become impossible for underwriters to make relevant judgments about risks (Jennings 24).

Recommendations by industry experts on what insurers must do to cope with catastrophes remain somewhat the same. Ramani Ayer, former chairman of the Insurance Services Office and president and chief operating officer of ITT/Hartford Group Inc., says that insurance companies, and the rest of society, are much too content to wait for a disaster to happen, rather than give serious consideration to how they will cope with the consequences. He also warns that the status quo is unacceptable and staying the same will only result in huge losses. Ayer suggests that insurers build strong, principled underwriting programs for areas subject to windstorms or earthquakes, taking into account calculation of maximum probable loss. Also, insurers should grade the risks they cover on municipal building codes and their enforcement and

provide incentives to homeowners to upgrade their structures and improve their storm worthiness. He also recommends that reinsurers work more closely with insurers and more carefully assess their catastrophic exposures. Ayer warns reinsurers that choose to write in catastrophe-prone areas to spread their risks (Souter 13).

Ayer also believes that state governments should allow realistic rates for risks in catastrophe areas. He notes that people who build their homes and live "with one foot on the porch and the other in the water" should pay for that privilege. The same is true for those whose home "happens to be on an earthquake fault line." Policyholders who live in safer areas should not be expected to subsidize policyholders who live in riskier areas of the country, according to Ayer (Souter 13).

Ayer also recommends that state authorities help alleviate the pain of disasters by establishing funds to supplement disaster reimbursements from insurers and federal funds. Additionally, state authorities should ensure that their emergency response facilities are in place and ready to respond at all times. Ayer believes the federal government plays a crucial role in preparing for disasters by providing funds for disaster assistance (Souter 13).

The recent string of disasters has led insurers to wonder what their strategy for the future will be. They may also wonder what lies ahead for the industry and to what extent their coverages and rates could be affected. The huge losses of 1992 led to talk of firming rates, especially for reinsurers. Reinsurance pricing is expected to increase by as much as 200 to 300 percent. Many in the industry believe that federal coverage should be given if losses are above the point at which the industry could cover them. Industry executives believe they have the right to ask for help

if the viability of the industry is in jeopardy because of a major catastrophic loss. If the industry is in serious trouble, then so is the public good (Christine 60).

After the 1992 catastrophes, some insurers adopted a variety of policy form changes designed to provide additional incentives to control losses and encourage adequate insurance to value. These include: capping guaranteed replacement coverage at a fixed percent above the policy limits; charging a separate premium for guaranteed replacement coverage; restricting coverage for home additions to a small fraction of existing policy limits; raising deductibles; and imposing earthquake sublimits on property insurance policy endorsements ("Impact" 24).

Insurers' realization that hurricane exposures and their potential destruction are much greater than previously thought, combined with a weakened financial condition for many companies, has prompted the industry to withdraw from hurricane-exposed states to bring property exposures into line with their financial capacity. Many companies, especially those in Florida, have planned to cut their homeowners business by instituting premium quotas on agents, prohibiting new business, not renewing entire books of business, canceling producers' contracts and reducing agent commissions. In addition to the ten companies declared insolvent because of Hurricane Andrew, two companies have left the state. No admitted company appears to have indicated a willingness to enter the Florida homeowners market. According to A.M. Best Company, these business cutbacks could leave more than 500,000 homeowners without insurance provided by the voluntary admitted market, representing five to ten percent of the total (Snyder 23).

After Hurricane Andrew, insolvent companies owed \$400 million in unpaid claims for 15,000 policyholders. The two percent annual premium tax for the Florida Insurance Guaranty Association (FIGA), generating about \$70 million each year, was insufficient to cover these unpaid claims. The legislature authorized up to \$500 million in bonds. After the bonds were issued in February 1993, FIGA paid about \$430 million in claims through June 1993. The bonds are to be repaid by an additional insurer assessment of two percent of premiums per year for the next ten years ("Impact" 15).

Louisiana also needed assistance with insolvencies and unpaid claims. A ruling by the attorney general in August 1993 allowed the State Bond Commission to approve a \$130 million bond issue, so the Louisiana Insurance Guaranty Association (LIGA) could continue paying claims for insurers that failed after Hurricane Andrew. LIGA's funds would have run out in November without the bond issue ("Impact" 15).

In Hawaii, homeowners insurance availability is also a problem. Since Hurricane Iniki struck, two companies have withdrawn from the market, one has become insolvent, and another is offering a policy only on new and renewal business that excludes wind loss due to hurricane. As in Florida, no admitted insurers have entered the Hawaiian market, and company withdrawals could leave 80,000 homeowners without insurance. Although these numbers are much smaller than those of Florida, they represent 35 percent to 40 percent of the Hawaiian homeowners market (Snyder 23).

To prevent a shortage of homeowners insurance that could leave thousands of homeowners without coverage, several state and federal solutions have been implemented or proposed. Florida has taken three

major steps to lessen potential homeowners availability problems. First, it created the Permanent Homeowner Joint Underwriting Authority. This facility operates with eight servicing carriers that issue basic homeowners policies providing coverage of up to \$500,000 at a cost of 25 percent above the average voluntary market rate. The servicing carriers perform all underwriting and claims functions for a fixed commission, but PHJUA is the risk-bearing entity and will generate either a profit or loss. The 25 percent higher-than-average premium is meant to discourage use of the facility and enable greater profit potential. Losses generated by the facility will be offset by assessments on the companies based on market share. These assessments would be unlimited, except for those companies writing less than \$20 million in coverage (Snyder 23).

Second, Florida expanded the eligibility for its coastal wind-loss pool, known as the Wind Storm Association, to all counties in the state. Previously, WSA provided wind-loss insurance in parts of 25 highly exposed coastal counties that were deemed uninsurable by the industry because of the threat of hurricanes (Snyder 23).

Finally, Florida is aggressively preventing insurance companies from engaging in redlining, a form of illegal underwriting discrimination. The insurance department investigated several complaints that certain insurers had ceased offering insurance in coastal areas of southern Florida. In addition, agent groups banded together to contest the underwriting restrictions certain companies had implemented in the state. The insurance department can revoke an insurer's license and/or impose fines if a company engages in this illegal activity (Snyder 23).

Meanwhile, California Insurance Commissioner John Garamendi is making sure that policyholders with earthquake damage get full contract



value on their policies following the January earthquake. The policyholder protection effort will involve an intensive consumer education campaign, including media ads and a hot line, to inform them of what their rights are. Garamendi recommends that policyholders with earthquake damage file their claims immediately and pursue all their options. If policyholders don't have earthquake insurance, they might receive coverage through other kinds of property insurance. Garamendi's second concern is to carefully monitor insurance companies, as well as monitoring policyholder complaints and carrying on investigations. The department will be policing the industry and intervening when problems arise. The last concern for Garamendi is to punish those companies that resist paying for losses sustained by deserving policyholders. Garamendi also believes that because earthquake insurance is too expensive for most consumers, the federal government must establish a natural disaster insurance program. A Natural Disaster Protection Act, which would create a federal catastrophe reinsurance facility, is currently being considered in the White House ("Garamendi" 38).

In conclusion, the impact of catastrophes on property insurance continues to be of growing concern for both insurers and policyholders. 1992 proved to be the most devastating in terms of catastrophic losses. Hurricane Andrew was the worst of a string of disasters in that year. Already, 1994 is shaping up to be one of the worst years, if not the worst year, for catastrophic losses. California has endured its fair share of catastrophes in the past five years, including the San Francisco earthquake, the Los Angeles riots, the Oakland fires, the Southern California brush fires, and the most recent Los Angeles earthquake. The

January earthquake damages are being estimated and reestimated as we speak.

Reinsurance has an extremely important role in helping primary insurers to deal with catastrophes. Although the availability and terms of reinsurance have been constrained, reinsurers seem to be faring better than primary insurers. Insurers are learning to cope with catastrophes by imposing stricter policy terms, by geographically diversifying their writings, and by spreading their risks. Insurers are also concentrating on becoming more aware of the possible frequency and severity of catastrophes.

The future of the property/casualty insurance industry is one of uncertainty. The devastating catastrophe losses are leading to problems for insurers and policyholders alike. If the frequency and severity of these catastrophes continue at the current pace, as they are predicted to, higher rates and less coverage could be in store for homeowners. While some insurers can handle such losses, some will be unable to pay claims or will become insolvent. Finally, government intervention on the federal and state levels may be the answer to coping with the large losses by providing disaster recovery and establishing guaranty funds. However the losses are shifted, the costs associated with catastrophes will ultimately be shared by both insurers and homeowners.

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